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TREATMENT OF RHEUMATIC FEVER WITH CRUDE HESPERIDIN (Vitamin P)

(Preliminary Report)

By JAMES F. RINEHART, M.D.

From the Department of Pathology, University of California Medical School, San Francisco, California. Read before the California Heart Association in Los Angeles, May 6, 1944.

Ten years ago we reported the experimental production of rheumatic type lesions in the heart and joints of guinea pigs which had been subjected to scurvy and infected with hemolytic streptococci of guinea pig origin (1). Stemming from this we developed the concept of subclinical scurvy as the host factor which prepares the soil for the development of rheumatic fever under the influence of hemolytic streptococcic infection. The common occurrence of respiratory infections with various strains of group A hemolytic streptococci preceding the onset of rheumatic fever strongly incriminates this organism as the infective agent. On the other hand epidemiological evidence also indicates some other factor or factors are operating. While respiratory infections with effective strains of hemolytic streptococci are common, in only a small minority of cases are such infections followed by the rheumatic syndrome. As we have previously pointed out, consideration of the social incidence, seasonal occurrence and geographic distribution of rheumatic fever suggests the contribution of some environmental influence other than the infection. Considering that subclinical scurvy might be this environmental factor, studies were made regarding the nutritional status of patients relative to vitamin C. These data have been recently summarized (2). In brief, while evidence of suboptimal nutrition relative to vitamin C was a very common finding it was not invariably so.

The work of Roff and Glazebrook (3) and Glazebrook and Thomson (4) afforded the first direct clinical observations indicating that vitamin C deficiency may predispose to rheumatic fever and the correction of this deficiency may be of prophylactic value. The first study (3) reported the occurrence among naval trainees of a gingivo-stomatitis, commonly associated with rheumatic manifestations, which has shown to be due to vitamin C deficiency. In the later study (4) observations were made on a large group of students under circumstances which presented an unusual opportunity to study the effects of hemolytic streptococcic infection in potentially scorbutic and control groups. Approximately 1,500 youths in a naval training school constituted the group studied. It was estimated that the average daily intake of vitamin C per student was between 10 and 15 mgm. The occurrence of recurrent waves of tonsillitis due to hemolytic streptococci afforded the factor of infection. Three hundred thirty-five of the 1,500 students observed in the study, were given liberal daily supplements of ascorbic acid which was added to the milk and cocoa. The authors found no significant difference in the *incidence* of common colds and tonsillitis in the two groups. The duration of illness with the common cold was not different in the two groups. However, the duration of illness due to tonsillitis was significantly different in the two categories. In the vitamin C treated classes the average stay in the hospital was 10 days and in the untreated group 16.7 days. The most striking influence of vitamin C was in the reduction of the incidence of two complications of the streptococcic infections. There were 17 cases of pneumonia and 16 cases of acute rheumatism among the 1,100 controls and no case of either disease among the

335 youths having received vitamin C.* Statistical analyses showed that a difference as great or greater than this would be expected once in 50 times in a homogeneous population. Thus, it would appear that vitamin C does, in fact, exert an influence in preventing the rheumatic complication of streptococcic infections.

Although no exhaustive study has been made of the therapeutic value of vitamin C in rheumatic fever results recorded to date have been disappointing. Sendroy and Schultz (5) in a carefully executed but relatively short experiment failed to find any therapeutic benefit from the administration of ascorbic acid. Several recurrences of rheumatic activity were noted in cases that had received adequate supplements of ascorbic acid for periods of one to four months. In a group of rheumatic children Kuttner (6) found that supplementary doses of vitamin A, B complex, C and D added to an ordinary well balanced diet did not reduce the incidence of upper respiratory infections and noted that three children who had received the additional vitamins for some period of time developed rheumatic manifestations following a streptococcic pharyngitis. It appears that the administration of vitamin C does not exert a direct curative action or prevent *recurrences* of the disease in *rheumatic* children. The failure of vitamin C to exert a curative action does not imply that it is without therapeutic usefulness. Jones (7) has observed the reduced incidence of distressing hemorrhagic manifestations in rheumatic fever. He notes that "ten years ago a ward of seven or eight children with active rheumatic fever, three or four nasal packings were frequently necessary. This picture is now completely altered. Nose bleeds are so reasonably mild and less frequent that the packing of the nose is unusual." This changed picture he is inclined to ascribe to more liberal and intelligent use of vitamin C rich foods or ascorbic acid in the management of cases.

In 1936, following a preliminary announcement by Rusznyák and Szent-Gyorgyi (8), Armentano with them and others (9) reported the presence in extracts of Hungarian red pepper and lemon juice of a substance other than ascorbic acid which exerted a control over a number of hemorrhages in cases of vascular purpura and restored to normal the increased permeability of capillaries to fluid and protein encountered in cases of vascular purpura and certain infections. This substance was a flavone designated as vitamin P (permeability factor). Experimental observations in animals regarding vitamin P have been conflicting and possibly are inconclusive although there is increasing support for its role as a nutritive factor essential in maintaining normal capillary strength and permeability (10). In addition to Armentano's excellent original report, a considerable amount of clinical data has accumulated subsequently supporting the physiological activity of this material in increasing the capillary strength in cases of vascular purpura (11). The original authors expressed the opinion that vitamin P acts in conjunction with ascorbic acid as a part of an oxidation reduction system. At the time our experimental work was done the existence of vitamin P was unknown. It is probable that our animals were subjected to deficiency of this factor as well as vitamin C. Purpuric and other hemorrhagic manifestations are, of course, common in rheumatic fever. In view of these considerations it seemed pertinent to us to investigate the possible usefulness of vitamin P in the treatment of rheumatic fever. Our first observation was made in January, 1941. In a recent report concerned with nutrition in rheumatic fever (2) the writer described an apparent beneficial effect of vitamin P in three cases. Subsequently we have studied this subject further and are considerably encouraged by the observations which have been made.

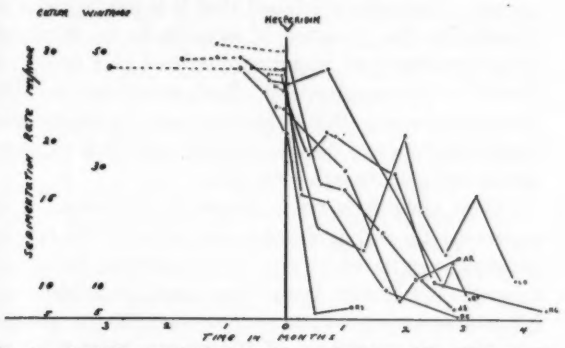
To date 19 cases (15 children and 4 young adults) have been followed for periods of one month or longer under administration of vitamin P. The first three patients who were treated in 1941, received preparations of vitamin P designated as citrin and calcium eryiodictate.† Subsequent cases have received a preparation of Crude Hesperidin prepared from orange peel.‡ The substance which is administered by mouth has a mildly bitter taste. No toxic manifestations have been observed in the cases treated. Ten of the 19 cases studied had shown persistent activity of the rheumatic process for periods ranging from 6 to 17 weeks (average 9.4 weeks) prior to treatment. In the remaining nine cases, treatment was instituted at intervals of one to five weeks after the onset of illness. The response following this therapy, while not dramatic, has been surprisingly consistent. All cases showed a slowing of the sedimentation rate which was first manifest in one to three weeks in 18 of the 19 cases. In most instances the sediment rate progressively fell to normal in periods of one to two months. Clinical improvement paralleled the slowing of the sedimentation rate. Two cases which were followed for a period of one month only, although showing some slowing of the sedimentation rate remained "active" at the end of this period of observation. Four other cases showed transient episodes of

* The authors felt that there was some relationship between the cases of pneumonia and those of rheumatic fever. They noted the occurrence of a low-grade basal lung consolidation or pneumonitis which "was charaacterized on the one hand by its tendency to progress into rheumatism and on the other hand by its disappearance when treated with ascorbic acid."

† Supplied through the courtesy of the California Fruit Growers' Exchange.

‡ Supplied through the courtesy of Abbott Laboratories. At the present time, this material is made available for investigational use only. It is dispensed as compressed tablets of 0.5 grams. The daily dose administered is 1.5 grams. One tablet is given three times daily with meals.

reactivation of the rheumatic process during the early period of treatment. (Two cases were associated with recognized upper respiratory infections and in two no such infections were noted). In each instance the manifestation of reactivation was mild and short lived. During the second week of therapy one case was complicated by a virus pneumonia after an initial slowing of the sedimentation rate had occurred.



Treatment of Rheumatic Fever With Crude Hesperidin (Vitamin P)

As may be seen in the representative graphic records of the sedimentation rates shown in Figure 1 the slowing appears to be related to the introduction of the therapy. No other modification of the treatment plan for the individual cases was made. The most significant cases are those which had showed persistent evidence of rheumatic activity. To the writer it seems quite improbable that the findings here reported are coincidental, but obviously a larger series of cases must be studied before the effectiveness of this therapy can be established. The high incidence of the disease and the associated disability and death caused by rheumatic fever demand this.

Armentano's studies included one case of rheumatic fever in which the capillary strength and permeability were elevated on administration of vitamin P. Kaether and Slany (12) reported lowered capillary strength in rheumatic diseases and suggested that this might be improved with citrin. As has been noted, most of the studies and the reputed benefit of vitamin P have been in cases of vascular purpura. It is generally believed that most instances of vascular purpura are due to allergic mechanisms. The operation of allergic factors in rheumatic fever has received considerable support (13). Most allergic reactions probably involve the capillary bed. If vitamin P is of importance in maintaining a normal anatomic and functional state in capillaries it is not improbable a deficiency of this substance might render them and adjacent tissues more vulnerable to allergic insult.

Relatively gross studies of the capillary strength by the Hecht method are being made on the series of cases under observation. These data are not yet ready for analysis.

As urgent as useful therapy for rheumatic fever may be, of even greater importance is the need for effective prophylaxis. Complete control of streptococcic infections is not possible at this time. If nutritional deficiency of vitamins C and P prove to be conditioning factors which "prepare the soil" for rheumatic fever, the prophylactic implications are clear.

Summary

The development of the concept that nutritional deficiency may be the host factor predisposing to rheumatic fever under the stimulus of hemolytic streptococcic infection and the observations implicating vitamin C deficiency are reviewed. Studies are summarized which indicate that a plant pigment, which has been designated as vitamin P, is a food factor important to maintenance of normal capillary strength and permeability. Therapeutic value has been ascribed to vitamin P in cases of vascular purpura. It is believed that this substance acts in conjunction with vitamin C as a part of an oxidation reduction system.

The presumed association of vitamin P with ascorbic acid has led the writer to study the use of vitamin P in treatment of cases of rheumatic fever. The apparently favorable influence of this therapy is described in the series of 19 cases so treated. It is noteworthy that 10 cases of the group had shown persistent activity of the rheumatic process for an average period of nine weeks. It seems improbable that improvement noted was coincidental. It is recognized, however, that rheumatic fever tends to run an unpredictable course and that spontaneous remissions may occur at any time. Consequently this must be considered a preliminary report and final judgment regarding the effectiveness of vitamin P in the treatment of rheumatic fever withheld until a larger number of cases have been studied.

A portion of the cases reported in this study were under the care of Dr. Helen Johnson, Chief of the Cardiac program of the Crippled Children's Bureau of the State Department of Public Health. The author gratefully acknowledges this cooperation.

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METAL TRADES SUPPORT VOLUNTARY TESTS

Dr. J. C. Geiger, Director of Public Health, San Francisco Health Department, announces a new procedure in the Industrial Venereal Disease Control Program of San Francisco. The Bay Area Metal Trades Council, of the American Federation of Labor, unanimously passed a resolution approving voluntary preemployment serologic examinations which are conducted by management in cooperation with health departments.

Under the operation of this program voluntary preemployment serologic specimens will be secured by medical representatives of management. These specimens will be submitted to the laboratory of the City and County of San Francisco Department of Public Health. The results of these laboratory findings are referred to the Division of Venereal Diseases of the local Department of Public Health. Information is kept strictly confidential between the health department and the individual whose blood is tested. Information pertaining to the results of these examinations is reported neither to labor unions nor to management.

The Division of Venereal Diseases assumes responsibility of advising employees of positive serologic examinations. Industry is advised that it is not justified in considering the presence of syphilis in an employee under treatment or adequately treated as a cause for discharge from employment. Such an attitude is detrimental to the war effort, a hindrance to the progressive industrial venereal disease control, and leads to plant management-labor union conflict.

Latent syphilis is not a danger to industry. It is neurosyphilis and cardiovascular syphilis, the results of latent syphilis, which present the potential industrial hazard. The Health Department and not industry or labor unions must assume the responsibility for requiring adequate treatment of the known, untreated, or inadequately treated syphilitic industrial worker. Only those workers who are not amenable to, or who do not respond satisfactorily to adequate treatment, should be placed in new occupations commensurate with their physical condition. Venereal disease case finding and case holding can be best managed by the health department as an unbiased official agency legally responsible for these activities.

Failure of the employee to submit to voluntary preemployment blood tests under this industrial venereal disease control program will in no way jeopardize that person's chances of employment. The program, with the assistance of management and labor unions, will be put into practice in some of the large and small industrial plants under the direction of the Division of Venereal Diseases of the City and County of San Francisco Department of Public Health.

From the start of this program labor has cooperated fully with the local health agency. The establishment of this program was made possible by the assistance of the California Social Hygiene Association, the cooperation of union officials, and the efforts of members of the Division of Venereal Diseases.

PLANNED PARENTHOOD LEAGUE OPENS OFFICE

The California League for Planned Parenthood has opened offices at 68 Post Street, San Francisco.

This generation has learned all over again that there are great differences between a social order that is fundamentally bad and one that is essentially good.—Harry Woodburn Chase.

DELAYED BIRTH REGISTRATION FILLS A NEEDED DEMAND

Since the law that provides for delayed registration of birth became effective a little more than a year ago, 10,000 delayed registration certificates have been issued by the State Bureau of Vital Statistics. It is believed that, except for minor changes in the law that have been indicated, further amendments to the act as it now stands are unnecessary. The requirements are sufficiently rigorous to prevent the filing of fraudulent applications and the certificate, as issued, commands respect because it is based upon factual data.

In issuing a delayed registration certificate it is essential that both time and place of birth be proved. Unless documentary evidence, in such cases as may be required, proves both place and date of birth, it is impossible to fulfill the requirements of the law. This works a hardship upon a great many people who live in the remote rural districts of the State and who were born at the time when school records were not maintained regularly and for whom no census bureau, baptismal or other church records are available. Many of the family Bible records that were kept quite faithfully many years ago show only date of birth but no information relative to place of birth is included. This has led to the necessary refusal to accept certified copies of family Bible records in some instances for the reason that they prove time of birth only. Of course, if it is possible to submit other documentary evidence that proves place of birth the family Bible record is acceptable.

It is believed that there are many thousands of Californians whose births were not registered at the time that such events occurred who are eligible for birth registration under the delayed registration act. The State Bureau of Vital Statistics is in a position to be of assistance to many individuals who may have difficulty in securing the essential documentary evidence and who may desire more information relative to the various types of evidence that may be acceptable in securing delayed registration of their births.

Application forms for delayed registration may be secured from any local registrar of vital statistics. These applications, properly executed, are forwarded to the State Bureau of Vital Statistics at Sacramento together with the fee of $4 as required by law.

If the application complies with the provisions of the law, the State Registrar of Vital Statistics issues a certified copy of a certificate of delayed birth registration which is acceptable for all ordinary purposes that apply to a certification of a standard certificate of birth.

Learning without thought is labor lost. Thought without learning is intellectual death.—Confucius.

INSTITUTE ON VENERAL DISEASE CONTROL IN LOS ANGELES

The Summer Session of the University of California has announced a three weeks institute on venereal disease control to be held at the University in Los Angeles July 17 to August 4, 1944. The courses are open to public health workers, nurses and teachers. Other individuals who are interested in the program may be admitted by consent of the instructor. The tuition fee for the institute is $17.50.

Dr. Donald G. Davy, Medical Officer of the California State Department of Public Health, Los Angeles, and his staff will give the courses, which are scheduled as follows:

COMMUNITY CONTROL OF SYPHILIS AND GONORRHEA. 3 units.

(a) Nursing and Social Problems in the Control of Syphilis and Gonorrhea.

The development of the social hygiene movement, including the history, prevalence, therapy, and symptomatology of syphilis and gonorrhea. Emphasis will be placed upon individual and family adjustment, problems resulting from infection, and upon the importance of public health control measures.

M Tu W Th F, 1-3.

(b) Medical Problems in the Control of Syphilis and Gonorrhea Dr. Davy and the Staff

A series of fifteen lectures pertaining to the history, diagnosis, prognosis and treatment of syphilis and gonorrhea. Laboratory procedures and interpretation of laboratory tests as well as the official control program in California.

M Tu W Th F, 11.

(c) Group Discussions Dr. Davy and the Staff

Section meetings for further discussion of problems in a program for the control of syphilis and gonorrhea.

M Tu W Th F, 10.

FEW LABORATORY WORKERS AVAILABLE

One of the larger county health departments (Santa Barbara) of the State had to close down its laboratory service for a month because no one could be found to carry on this activity. Arrangements were made for one of the staff members of the State Laboratory to take leave of absence to carry on the public health laboratory activities of the county department until such time as a permanent technician may be found.

Another full-time county health unit (Sutter-Yuba) was about to suspend laboratory operations while the local bacteriologist was on vacation. The State Laboratory was able to assist and prevent the closing of the laboratory by lending the services of one of its bacteriologists for the vacation period.

SAN FRANCISCO MILK ORDINANCE UPHELD

On April 2, 1942, the California Supreme Court heard the case of the Natural Milk Producers Association of California against the City and County of San Francisco, the matter having come before the court on appeal. The decision of the trial court was appealed. The effect of the decision was to uphold the ordinance which requires the pasteurization of all milk sold in San Francisco with the exception of certified milk. Following the rendering of this decision the plaintiff took the case to the Supreme Court of the United States, which court determined that there were no Federal questions involved and, therefore, referred the case back to the California Supreme Court for such further proceedings as that court might determine appropriate.

Under date of April 13, 1944, the Supreme Court of California rendered a memorandum opinion upholding its former opinion, which reads as follows:

"(S. F. No. 16105. In Bank. Apr. 13, 1944) Natural Milk Producers Association of California (a Corporation) Appellants, v. City and County of San Francisco, Respondents. (For former opinion see 20 Cal. 2d 101.)

"The above entitled cause was heard and determined by a decision of this court on April 2, 1942 (Natural Milk etc. Assn. v. City etc. of San Francisco, 20 Cal. 2d 101 (124 P. 2d 25), in which decision the judgment of the trial court was affirmed. Thereafter plaintiffs appealed to the Supreme Court of the United States. That court made the following order: 'In this case appellants contend that the San Francisco Milk Ordinance violates the Fourteenth Amendment because it requires nonpasteurized raw milk sold in San Francisco to be certified by, and to conform to standards prescribed by, the Milk Commission of the San Francisco Medical Society, instead of by a public board or officer, while at the same time prohibiting the sale of all other nonpasteurized milk, including "guaranteed raw milk" which appellants allege is the same as certified raw milk. Subsequent to the trial of the case, the Milk Commission of the San Francisco Medical Society determined that nonpasteurized milk could not be certified by it as free from harmful bacteria, and promulgated an order accordingly, effective January 15, 1939. This fact, which apparently was not called to the attention of the Supreme Court of California, renders moot the Federal questions raised by appellants, since all milk sold in San Francisco, not certified by the Milk Commission of the Medical Society, is required by the ordinance to be pasteurized and since appellants do not by this suit challenge the validity under the Fourteenth Amendment of the pasteurization requirement. In order that the State court may make proper disposition of the case in the light of the fact that the Federal questions can not be decided here, we vacate the judgment, without costs to either party in this court, and remand the cause to the Supreme Court of California for such further proceedings as it may deem appropriate.'

"The instant action is one by plaintiffs seeking to have enjoined the enforcement of an ordinance of the City and County of San Francisco on various constitutional grounds. As evident from the foregoing order of the Supreme Court of the United States the issue of whether or not the ordinance was discriminatory because it permitted the sale of certified milk, a raw milk, was considered moot because since the trial of the action the Milk Commission of the San Francisco Medical Society adopted a resolution requiring certified milk to be pasteurized, and further, that no claim was made by plaintiffs in the Supreme Court of the United States that a law requiring all milk to be pasteurized is unconstitutional.

"Plaintiffs again advance substantially the same arguments as heretofore made before this court. We adhere to the views expressed in our former opinion and adopt them now as the decision of this court.

"Plaintiffs do not desire to sell certified milk in San Francisco. They assert that they should be entitled to sell raw milk. The fact that the Milk Commission made its pasteurization requirement for certified milk does not alter the result. Whether or not it had the authority under the ordinance to require pasteurization of certified milk (the ordinance appears to indicate that certified milk may be raw milk) need not be decided inasmuch as plaintiffs are not interetsed in selling certified milk, raw or pasteurized. The trial court denied the injunction and as we adhere to our former decision there is no ground for reversing the judgment of the trial court.

"For the foregoing reasons we hereby adopt our former opinion and affirm the judgment of the trial court."

We have not and cannot have such war aims as the seizures of foreign territories, the subjugation of foreign peoples, regardless of whether it concerns peoples and territories of Europe or peoples and territories of Asia, including Iran. Our first aim consists in liberating our territory and our peoples from the German Fascist yoke. We have not and cannot have such war aims as imposing our will and our régime on the Slavs and other enslaved peoples of Europe who are awaiting our aid. Our aid consists in assisting these people in their liberation struggle against Hitler tyranny and then setting them free to rule on their own land as they desire. No intervention whatever in the internal affairs of other peoples!—Josef Stalin (from speech delivered at a meeting of the Moscow Soviet, 1941).

PUBLIC HEALTH NURSING IN CALIFORNIA

At the first of each calendar year, a count is made by the Public Health Nursing Service of all nurses engaged in public health nursing activities in the State. Table I shows the number of nurses employed in public health nursing in each county, the types of agencies by which they are employed, and the ratio of nurses to population as of January 1, 1944. Industrial nurses and agencies are not included in this table.

In spite of the fact that there is a definite shortage of public health nurses at the present time, the total number of such nurses employed in California as of January 1, 1944 showed an increase of 38 over that of January 1, 1943. Information in regard to the number of nurses employed by the various types of agencies as of January 1, 1943 and January 1, 1944 is given in Table II.

For the past four years a study of educational qualifications of these nurses has been made in conjunction with the count. Unfortunately the information in regard to the educational preparation of the nurses is not so complete as it has been in past years. Whereas 95.7 per cent of the nurses engaged in public health nursing were included in the survey as of Jauary 1, 1943, information in regard to educational preparation was available for only 90.1 per cent as of January 1, 1944.

There has been a slight increase in the percentage of nurses employed in public health nursing who hold collegiate degrees; from 26.6 per cent last year to 27.5 per cent this year. There has been a corresponding small increase in the percentage of nurses who have completed the full university program of study in public health nursing, from 41.6 in 1943 to 42.6 in 1944.

Table III summarizes the information as of January 1, 1944, in regard to the nurses employed by public health agencies who hold a collegiate degree and have completed an approved program of study in public health nursing.

According to the information on hand, the number of nurses employed in industry has almost doubled in the past year. The increase is probably not so marked as it appears to be since many of these nurses were working in industrial plants prior to January 1, 1943, but were not known to the department at that time. Included in the count this year were 837 industrial nurses, whereas the number counted last year was 426.

Let us not forget, that we always have had and will continue to have competition from other countries. Clearly our safety and our well-being depend upon the fullest encouragement to American ingenuity, upon maintenance of our system of freedom of private enterprise. In fact, I strongly suspect that this freedom is basic and that, without it, in the long run other freedoms cannot exist.—Walter S. Gifford.

TABLE I

Public Health Nurses Employed by Official and Non-Official Agencies, and Ratio of Nurses to Population in California Counties, January 1, 1944

County	Population	Number of Agencies		Number of Public Health Nurses		Ratio of Public Health Nurses to Population
	Preliminary Estimate for January 1944	Official	Non-official	Official	Non-official	
Alameda	625,000	11	4	86	22	5,787
Alpine	300	Combined with Mono County				
Amador	7,500	1	--	1	--	7,500
Butte	43,500	4	1	4	1	8,700
Calaveras	7,000	--	--	--	--	-----
Colusa	9,300	1	--	1	--	9,300
Contra Costa	220,000	8	2	24	2	8,462
Del Norte	3,700	1	--	1	--	3,700
El Dorado	11,900	2	--	2	--	5,950
Fresno	190,000	9	3	20	4	7,913
Glenn	11,800	1	--	1	--	11,800
Humboldt	47,000	2	--	4	--	11,750
Imperial	55,500	6	--	8	--	6,938
Inyo	9,700	3	--	3	--	3,233
Kern	140,000	4	1	30	1	4,516
Kings	36,000	6	--	8	--	4,500
Lake	7,900	2	--	2	--	3,950
Lassen	17,000	2	--	2	--	8,500
Los Angeles	3,200,000	79	7	413	56	6,823
Madera	24,000	3	--	4	--	6,000
Marin	66,000	5	2	9	8	3,882
Mariposa	3,800	1	--	1	--	3,800
Mendocino	26,000	3	--	3	--	8,667
Merced	47,000	4	1	4	1	9,400
Modoc	8,500	2	--	2	--	4,250
Mono	1,400	--	--	--	--	-----
Monterey	86,000	5	1	17	1	4,778
Napa	42,000	2	--	2	--	21,000
Nevada	15,500	1	1	1	1	7,750
Orange	152,000	9	2	22	3	6,080
Placer	27,000	3	--	3	--	9,000
Plumas	12,500	1	--	1	--	12,500
Riverside	122,000	10	2	23	3	4,692
Sacramento	191,000	3	2	25	6	6,161
San Benito	12,000	2	--	2	--	6,000
San Bernardino	182,000	9	1	25	1	7,000
San Diego	407,000	5	2	67	9	5,355
San Francisco	690,000	6	3	106	30	5,074
San Joaquin	146,000	1	1	14	1	9,733
San Luis Obispo	42,500	3	1	10	1	3,864
San Mateo	141,000	12	1	17	8	5,640
Santa Barbara	73,000	3	1	17	4	3,476
Santa Clara	195,000	12	4	33	5	5,132
Santa Cruz	44,000	3	--	6	--	7,333
Shasta	34,400	2	--	3	--	11,477
Sierra	2,200	--	--	--	--	-----
Siskiyou	27,000	1	--	2	--	13,500
Solano	110,000	7	2	23	19	2,619
Sonoma	75,000	6	1	11	1	6,250
Stanislaus	85,000	1	--	6	--	14,167
Sutter	21,000	See Sutter-Yuba				
Tehama	13,300	1	--	1	--	13,300
Trinity	3,300	--	--	--	--	-----
Tulare	110,000	11	1	14	1	7,333
Tuolumne	9,000	1	--	1	--	9,000
Ventura	75,000	12	--	18	--	4,167
Yolo	30,000	1	--	4	--	7,500
Yuba	18,500	See Sutter-Yuba				
Sutter-Yuba	39,500	3	1	9	1	3,950
Totals	8,014,000	296	48	1,116	190	6,136

TABLE II

	1943			1944		
	Agencies	Supervisors	Staff	Agencies	Supervisors	Staff
State Health Dept.	1	9	6	1	10	4
Other State Agencies	2	4	1	4	6	4
Depts. of Health						
Rural	26	36	248	27	36	236
Urban	12	29	235	15	33	270
Boards of Education						
Rural	172	1	191	163	2	181
Urban	75	9	336	76	12	319
Other Official Agencies						
Rural	13	--	20	10	1	16
Urban	2	1	3	2	2	4
Indian Service—Rural	1	--	4	1	--	4
Non-Official Agencies						
Rural	13	2	18	13	2	21
Urban	32	15	112	31	18	122
Calif. Physicians' Service						
Rural	1	1	4	1	1	4
Urban	2	2	5	3	2	20
Industrial Companies						
Urban	118	16	410	204	63	774
TOTAL	470	125	1593	551	188	1979
Number Counties having no rural public health nursing service			2			5
Number cities (population over 10,000) having no public health nursing service			0			0

TABLE III

Nurses Employed in Public Health Nursing	*January 1, 1943*	*January 1, 1944*
Total Number	1292	1330
Number included in survey	1238	1198
Number having collegiate degree	322	329
Percentage having collegiate degree	26.6	27.5
Number who have completed university curriculum in public health nursing	521	510
Percentage who have completed university curriculum in public health nursing	41.6	42.6

CORRECTION OF VITAL STATISTICS RECORDS

Under the provisions of Chapter 10575 of the Health and Safety Code, whenever the facts are not correctly stated in any certificate of birth, death or marriage that is already registered, the local registrar of vital statistics shall require an affidavit under oath to be made by the person who asserts that the error exists, stating the changes necessary to make the record correct and supported by the affidavit of one other credible person having knowledge of the facts. It happens at the present time that many individuals, after appealing to the courts for change of name, have received judicial permission to make such change, following which they immediately invoke the section of the Health and Safety Code, above referred to, seeking to have their new names placed upon the original birth certificates.

This procedure is not in accordance with the spirit of the section quoted, which is not applicable for the purposes desired. The Attorney General has ruled that the State Registrar and certain local registrars are required to register the names of children born in California and that there are certain powers vested in these officials to correct original records if it appears, on a proper showing, that the facts as noted in the original certificate are not correctly stated. There is no power, however, to alter a certificate which has been correctly made out in the first instance. The purpose of the certificate is to show the correct record as of the time of filing.

For these reasons the State Bureau of Vital Statistics refuses to apply affidavits that set forth any changes other than the correction of errors that may have been made in the certificate as it was filed originally. Many individuals who are now securing court orders to change their surnames are greatly disappointed when they find that new birth certificates under the new names can not be given to them. It is unfortunate that such a condition exists for very often such individuals have been using a fictitious name for a long period of years, which is finally made bona fide through court action.

Nevertheless, this section of the Health and Safety Code is designed only to correct errors on the certificate as originally filed and no other changes can be effected.

OLIVE OIL PLANTS ARE INSPECTED

Inspections of olive oil plants revealed that sewage disposal conditions are unsatisfactory in most places that are not connected with city sewers. Washing of olives prior to crushing, improving facilities for holding the product before washing, and better housekeeping in general, were recommended for most plants inspected.

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